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**Subject:** HHRA Issue Summary for May 23rd Project Manager's Meeting  
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All,

Here is EPA's list of outstanding issues for the Human Health Risk Assessment.

Evaluation of exposure to in-water sediments by divers: EPA added direct exposure to in-water sediments for workers, boat fishers and divers. EPA believes that exposure to in-water sediments by workers and boat fishers has been resolved (pending review and approval of April 21, EPC and Exposure Factors TM). For exposure to in-water sediments by divers, EPA proposes performing a semi-quantitative analysis. EPA plans on working with Mike Poulsen of DEQ to develop a comparative analysis of diver exposure compared to other sediment exposure scenarios.

Surface water as a source of drinking water: The work plan calls for an evaluation of short-term exposure to surface water as a drinking water source for transients. However, EPA has determined that drinking water is a protected beneficial use of the Lower Willamette River (based on DEQ water quality rules). As a result, EPA has determined that MCLs are potential ARARs for surface water at the site. In our December 2, 2005 Round 3 Data Gaps Memo, EPA stated that surface water should be evaluated according to standard drinking water residential and work exposure scenarios. A path forward for resolving this issue has not been agreed to.

Transition Zone Water: EPA and the LWG have been engaged in discussions regarding human exposure to drinking water. At this time, TZW does not need to be treated as a drinking water source but should be screened against tap water PRGs and MCLs to ensure protection of surface water. EPA also believes that TZW should also be evaluated to protect human consumers of crayfish and bivalves through a comparison to fish consumption AWQC and/or site specific criteria developed to ensure that contaminants do not accumulate in crayfish and bivalves at concentrations that pose a threat to human health. At this time, the MCL and bivalve consumption issues remain unresolved.

Surface Water: Although EPA recognizes that human health risks due to fish consumption will be evaluated through fish tissue, EPA believes that surface water should be compared to fish consumption AWQCs adjusted to account for site specific fish consumption rates (i.e., 175 g/day). This is necessary in part because certain chemicals (e.g., VOCs) were not analyzed for in fish tissue. This issue remains unresolved.

Collection of Additional Smallmouth Bass Tissue: EPA believes that additional smallmouth bass tissue is required to represent the range of exposure across the site and support the HHRA. This issue remains unresolved.

PBTs in breast milk: This issue was mentioned as a future topic for discussion in Appendix C of the Programmatic Workplan. If a breast-feeding exposure scenario is included in the HHRA, the method to use to estimate exposure for an infant and

how to characterize exposure and risk needs to be determined. EPA and DEQ are in the process of developing a proposal for evaluation of this pathway.

PAHs and PBDEs: EPA stated in the December 2, 2005 Round 3 Data Gaps Memo that any additional fish tissue samples include PBDEs and better detection limits for PAHs. This issue remains unresolved.